Visualizing multidimensional data similarities

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PROPOSITIONS

accompanying the PhD thesis

VISUALIZING MULTIDIMENSIONAL DATA SIMILARITIES
IMPROVEMENTS AND APPLICATIONS

by

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1. The success of any visualization depends on its ability to provide access to information, so that the user may gain knowledge.

2. Visualizations are important tools to provide useful insights in data and to communicate. But like words, they can also lie.

3. The lack of a clear and intuitive meaning of which dimensions influence a projection is a major drawback for its interpretation. The same holds for similarity trees.

4. Interactive explanatory tools can help on the challenge of interpreting multidimensional projection layouts by means of the data's original attributes. However, they have a different nature, and thus offer a possibly deceiving point of view on the data.

5. Trees and graphs are flexible and powerful tools to reflect similarity present in multidimensional data.

6. Data aggregations can improve the visual and computational scalability of visualizations, by trading precision for generality.

7. Edge bundling techniques trade clutter for overdraw to depict a graph's main edge patterns. Their descriptive power is enhanced by including multiscale capabilities.

8. There is no universal truth. The same fact may have different interpretations, depending of the ability, experience, and also the culture of the observer.

9. The period that yields more knowledge and experience is also the hardest of one's life.